

Remarks

The Examiner has rejected claim 52 as being indefinite under 35 U.S.C. § 112, second paragraph, for having an improper Markush group. Applicant has amended claim 52 such that this rejection is believed to no longer be appropriate.

The Examiner has also rejected claims 1-11, 13-20, 22-34, and 36-41 under 35 U.S.C. Section 103(a) as being obvious in view of Chen et al. (U.S. Pat. No. 5,733,570). Specifically, the Examiner has asserted that Chen discloses an absorbent dressing that may have a multilayer construction including a variety of dressing constructions known in the art (citing col. 5, lines 24-35). The Examiner further asserts that the particular arrangement of the layers is known by those of skill in the art since the instant specification and evidence of record fail to attribute any significance to a particular arrangement.

Applicants respectfully disagree with this assessment by the Examiner that any of the claims of the instant application are obvious in view of Chen. The instant specification is very clear about the benefits that are obtained by having at least two absorbent layers wherein the less absorbent layer is placed between the patient's skin and the more absorbent layer. The present invention recognizes that significant benefits can be obtained by having multiple absorbent layers with different absorbencies for each layer.

The benefits of the present invention are described throughout the specification. For example, attention is called to the specification at page 2, line 33 to page 3, line 3, which states that wound dressings of the invention include at least two absorbent layers: a first absorbent layer and a second absorbent layer. The first absorbent layer is typically more absorbent than the second absorbent layer, and can retain a greater volume of body fluids than the second absorbent layer. The second absorbent layer is often positioned such that it is located between the first

absorbent layer and the wound. This second absorbent layer provides integrity to the wound dressing and avoids transfer of the first absorbent layer into the wound. In this manner the second absorbent layer functions as a "barrier" between the first absorbent layer (which may partially "disintegrate" when exudate is absorbed under some conditions) and the wound.

In some claimed implementations, the second absorbent layer has adhesive properties (or is a pressure sensitive adhesive) and functions to enhance the overall integrity of the wound dressing. In this regard, the second absorbent layer ties the first absorbent layer to a wound-facing layer (or to the wound itself). By having adhesive properties, this second absorbent layer not only aids in controlling the absorption of exudate, but also physically joins to other components of the dressing.

As noted in the specification, the present invention seeks to avoid or reduce the problems that can occur when an absorbent deforms and partially disintegrates upon swelling. Specifically, as an absorbent takes in fluid it often bends and buckles such that some of the absorbent material breaks away from the dressing and enters the wound. This absorbent material can be left in the wound upon removal of the dressing, which is undesirable for cosmetic and therapeutic reasons.

Chen fails to recognize the problems solved by the present application or teach their solution. Chen does not teach wound dressings having multiple absorbent layers wherein the layers are each absorbent yet have different absorbencies. Indeed, Chen effectively teaches away from the present invention by recommending that "the relative amounts of respective monomers are selected to "maximize the fluid absorbency of the composition". Chen, column 3, lines 11-13. Thus, rather than teaching layers with more and less absorbency, Chen teaches all layers should be as absorbent as possible.

Chen also teaches that the absorbent composition preferably is capable of absorbing at least about 100 percent, and more preferably at least 200 or 300 percent by weight of a saline solution. Chen, column 1, line 65 to column 2, line 2. This contrasts with the present invention, where lower absorbencies are preferred for the less absorbent layer.

To the extent that Chen does teach use of more than one layer for the wound dressing, it does not teach the multilayer material having multi-absorbencies for the different absorbent layers. For example, various backing materials may be used, but these are intended to be either non-absorbent or merely transmissive of water. Chen, column 5, lines 32 to 55. Thus, Chen does not teach or suggest the claimed invention.

Applicants further note that additional independent claims, such as claim 30, claim additional patentable aspects of the invention, which are also non-obvious in view of Chen and the other cited references. Claim 30 is directed to a multi-layer wound dressing comprising: a first absorbent layer having an absorbency of at least 200 percent and containing less than 10 percent by weight water before application to a patient; and a second absorbent layer having an absorbency of less than 50 percent of the absorbency of the first absorbent layer; wherein the wound dressing is configured to be positioned on a patient such that the second absorbent layer is between the first absorbent layer and the wound. Nothing in Chen makes obvious a wound dressing having these properties.

Other claims are directed to specific formulations having improved features, such as compositions wherein the first absorbent layer comprises the reaction product of the hydrophilic, ethylenically unsaturated monomer; an acrylic acid ester of a non-tertiary alcohol having 4 to 14 carbon atoms; and a polar, ethylenically unsaturated monomer. In some implementations the non-tertiary alcohol has from 6 to 12 carbon atoms. Also, in some implementations first

absorbent layer comprises the reaction product of about 30 to 100 parts by weight of the hydrophilic, ethylenically unsaturated monomer; about 0 to 30 parts by weight of the acrylic acid ester of a non-tertiary alcohol having from 4 to 14 carbon atoms; and about 0 to 40 parts by weight of the polar, ethylenically unsaturated monomer.

The Examiner has also rejected claims 12 and 53-55 as being unpatentable over Chen in view of Dahmen ('557); claims 21, 35 and 42-44 as being unpatentable over Chen in view of Gilbert ('150); and claims 45-52 as being unpatentable over Chen in view of D'Haese ('111). Applicants respectfully assert, for the reasons provided above, that Chen is not a proper basis for an obviousness rejection of the present claims, and that none of these references when combined with Chen make obvious the claimed invention.

In view of the forgoing amendments and remarks, favorable action in the form of a notice of allowance is hereby solicited.

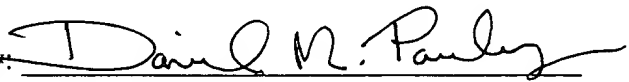
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

52. The body fluid absorbing material of claim 45, wherein the carboxylic acid monomer is neutralized by a base [containing] selected from the group consisting of sodium hydroxide, potassium hydroxide, lithium hydroxide, ammonium hydroxide, triethylamine, sodium ethoxide, sodium methoxide, or combinations thereof.